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SUMMARY OF 1948 WORK OF THE  
DEPARTMENT OF TECHNICAL SCIENCES

During February and March 1949, the sessions of the Bureau of the Department of Technical Sciences (OTN) were devoted to summarizing the 1948 scientific research activities of its institutes.

23 February 1949 Session

At the session of the OTN Bureau, 23 February 1949, the activities of the Institute of Precise Mechanics and Calculating Techniques were reported by N. Ye. Kobrinskiy, acting assistant director of the institute, and the report of Academician I. I. Artobolevskiy, president of the commission investigating the activities of the institute. The OTN Bureau noted the results attained in the past year by the institute in investigating calculating-analytical /schetno-analiticheskiye/ machines and their application to the solution of mathematical problems and in tabulating functions. The institute prepared for introduction and practical tests a number of works, among which were: an electro-integrator, tables that greatly simplify calculating techniques, and methods for solving mathematical problems with the aid of calculating-analytical machines. Workers at the institute published about 30 scientific works and prepared two monographs for printing.

The OTN Bureau proposed to the management of the institute that a scientific soviet be called to discuss work on the problems of electrical modeling and on the tabulation of functions, to determine the direction of future work in these fields; and that a meeting be called of the presidents of all interested organizations to discuss the course to be followed in connection with the utilization of the electrical integrators that are released.

The administration of the institute had its attention drawn to the necessity of establishing closer bonds with allied institutes of the Academy of Sciences USSR (Power Institute, Institute of Automatics and Telemechanics, Institute of Mathematics) and with industry. With the aim of strengthening the preparation of scientific cadres in the field of precise mechanics and calculating techniques, the conferees admitted the necessity of selecting young specialists to prepare for future scientific work as aspirants, candidates, and as junior scientific workers in the institutes.

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At this same session, the OTN Bureau heard a report on the activities of the Committee of Technical Terminology; the report of Academician A. M. Terpigorev, president of the committee, and the report of Academician I. I. Artobolevskiy. The OTN Bureau noted the results attained by the committee in the past year on the further development of the scientific bases of Russian technical terminology [see FDB Per Abs 76T4 and 12/49T39]. A collection of recommended terms on technical thermodynamics, three bulletins (technical classification of metals, alphabetical indices on general mechanics, and the elasticity theory), and three All-Union Standards of terms and alphabetical indices were published. The committee noted the consultative assistance in problems of terminology given to a number of ministries, higher technical schools, publishers, and branch scientific research institutes.

The OTN Bureau proposed to the administration of the committee that a meeting of institutes interested in the problem of organizing systematic work in related scientific-technical terminology be called. Attention was called to the necessity of disseminating information on the basic work of the committees. Moreover, it was noted that the work of the scientific soviet of the committee and the seminar on the critical discussion of completed work should be strengthened.

#### 16 March 1949 Session

On 16 March 1949, the session of the OTN Bureau discussed the scientific research activity of the Institute of Mining Affairs: the report of Academician A. A. Skochinskiy, director of the institute, and the report of V. I. Veyts, Corresponding member of the Academy of Sciences USSR. The OTN Bureau noted the work completed by the institute in 1948 on the problem of working deposits of hard minerals, in particular, a method worked out for selecting the type of shaft for the sub-Moscow coal field; on the problem of ore enrichment, i.e., establishment of the essential action of gases in ore flotation, etc.

Industrial applications have resulted from a number of works, among which are: "A Scientific Basis for Selecting the Methods for Discovery and Working the Deposits in the sub-Moscow Coal Field" "Field of Application and Basic Indices in High-Productive Systems for the Working of Ore Deposits," "Electromagnetic Methods of Controlling the Strength of Steel Cable," etc. Workers of the institute have published 46 scientific works. The institute held a number of consultations for the ministries of the coal industry, construction materials, metallurgical industry, etc.

Meetings were held on the following problems: mining pressures (Leningrad), the sudden unexpected ejection of coal and gas (Stalino), ore enrichment, cutting of grounds, blasting operations in the mining industry, and mechanization of mining operations.

Besides positive results, the OTN Bureau noted that the proper attention is still not given to a critical consideration of completed works. A proposal was made to consider in the scientific soviet a number of works: "Aeromechanical Methods of Combating Fires" (Institute of Mechanics, Academy of Sciences, USSR), "The Projection Theory of Anthracite Shafts," etc. The director of the Institute of Mining Affairs proposed that a check be made of the course to be followed in introducing works completed in the institute and that the OTN Bureau be informed of the results.

At this same session, the OTN Bureau discussed the activity of the Institute of Metallurgy imeni A. A. Baykov of the Academy of Sciences USSR: the report of Academician I. P. Bardin, director of the institute, and the report of Academician A. A. Skochinskiy. The OTN Bureau noted the works completed by the institute in 1948 on the problems of light and ferrous metals and alloys, and on the pressing problem of pig-iron metallurgy. A new method and apparatus for controlling metallurgical processes was prepared for introduction. The workers of the institute have published 35 scientific works, including: a symposium under the editorship

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of Academician I. P. Bardin on "Martin Steel Rails From Korchensk Ores," a monograph "The Metallurgy of Pig Iron, Part I," by M. A. Pavlov, etc. A considerable number of consultations were held with factories, scientific institutes, and ministries.

After noting the positive results of the activity in the Institute of Metallurgy, the OTN Bureau indicated shortcomings in the work of the scientific soviet, which still has not paid proper attention to the critical consideration of complete works. It was proposed that the direction and results of works be considered with respect to the following problems: the metallurgy of light (nonferrous) metals, the complex origin of oxides, the complex oxidation of metals, etc. The director of the institute proposed that a check be made of the present state of introducing completed works and that the results be reported to the session of the OTN Bureau with the assistance of the head of the industry concerned.

#### 23 March 1949 Session

At the session on 23 March 1949, the OTN Bureau discussed the activity for 1948 of the Commission on Lighting Technology at the OTN: the report of S. O. Mayzel', assistant president of the commission, and the report of K. A. Krug, Corresponding Member of the Academy of Sciences USSR. The OTN Bureau noted that during the first year of its existence the commission did considerable work on the coordination of the activity of a number of scientific research institutes in the field of the theoretical foundations of lighting technology, on light measurements, terminology, etc. The work of the commission has been prepared for printing and a handbook on lighting technology is ready for publication. The OTN Bureau confirmed the work plan of the commission for 1949 and proposes to its director that it pay greater attention to practical lighting technology and establish closer bonds with allied scientific research institutes and industrial enterprises.

At this same session the OTN Bureau discussed the activity of the section on transport problems: the report of Academician V. N. Obratsov and the report of V. I. Veyts Corresponding Member of the Academy of Sciences, USSR. The OTN Bureau noted the results attained by the section during the past year on the reserve (emergency) traffic capacity of railroads. The section published 22 works, including: a monograph on "Water, Air, and Land Transportation, Municipal and Industrial," by V. N. Obratsov and F. I. Shaul'skiy. A number of consultations were held with industrial and transport enterprises. Conferences were held on the problem of stabilizing earthen roadbeds, transport power uses, electrical propulsion of ships, etc. The OTN Bureau indicated the necessity of strengthening the activity of the section on the coordination of scientific work in allied transport fields. It was proposed that the scientific soviet discuss with critics and representatives of interested institutes work on basic problems of the section, and that closer bonds be established with allied scientific research institutes to improve the application of work on the subject, "Increasing the Traffic Capacity of Automobile Roads."

The OTN Bureau reminded all directors of scientific institutes of the necessity of strengthening the critical discussion of completed works, and indicated that the development of scientific discussions, criticism, and self-criticism of scientific labors must be one of the basic problems in the activity of scientific soviets, seminars and conferences.

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